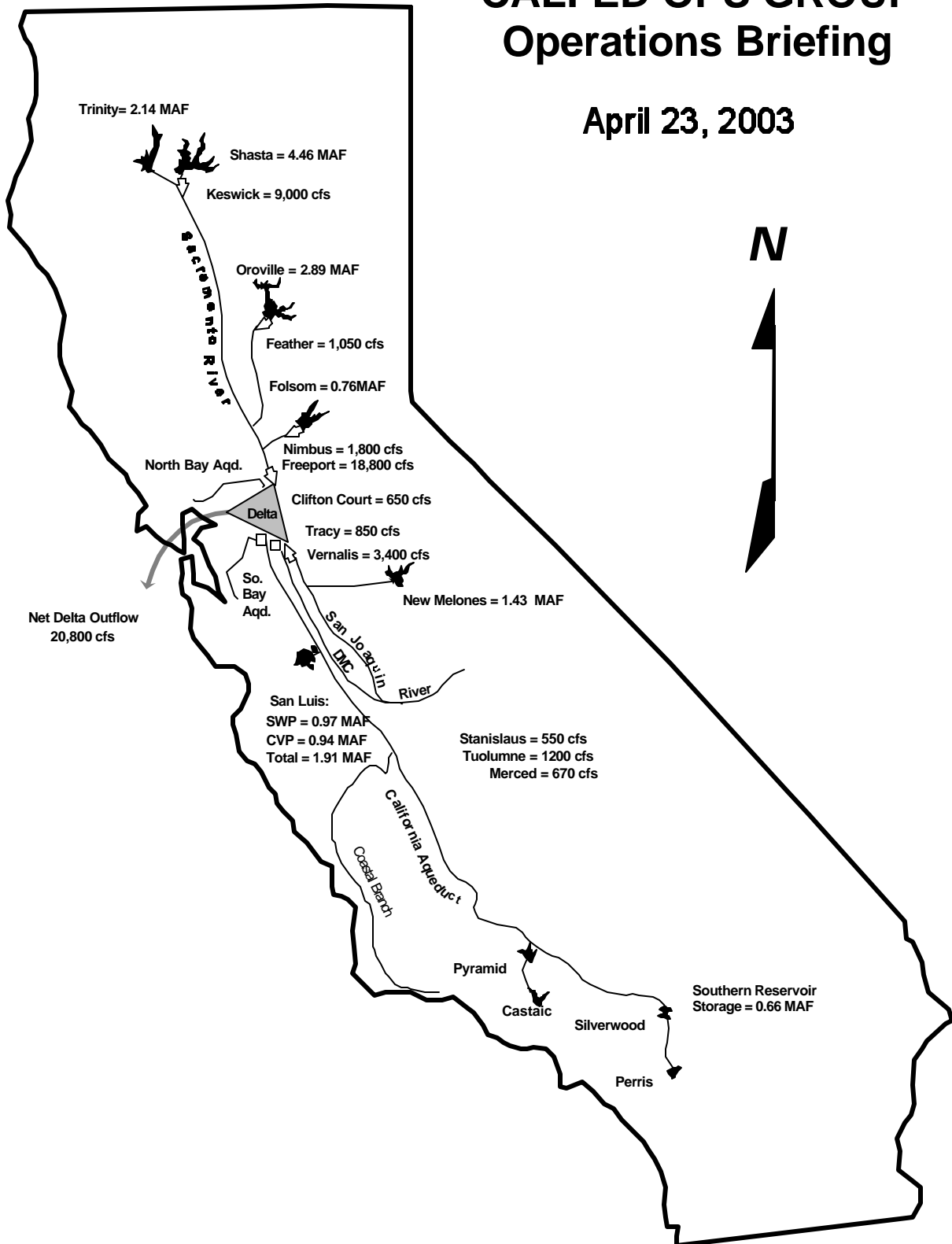


CALFED OPS GROUP Operations Briefing

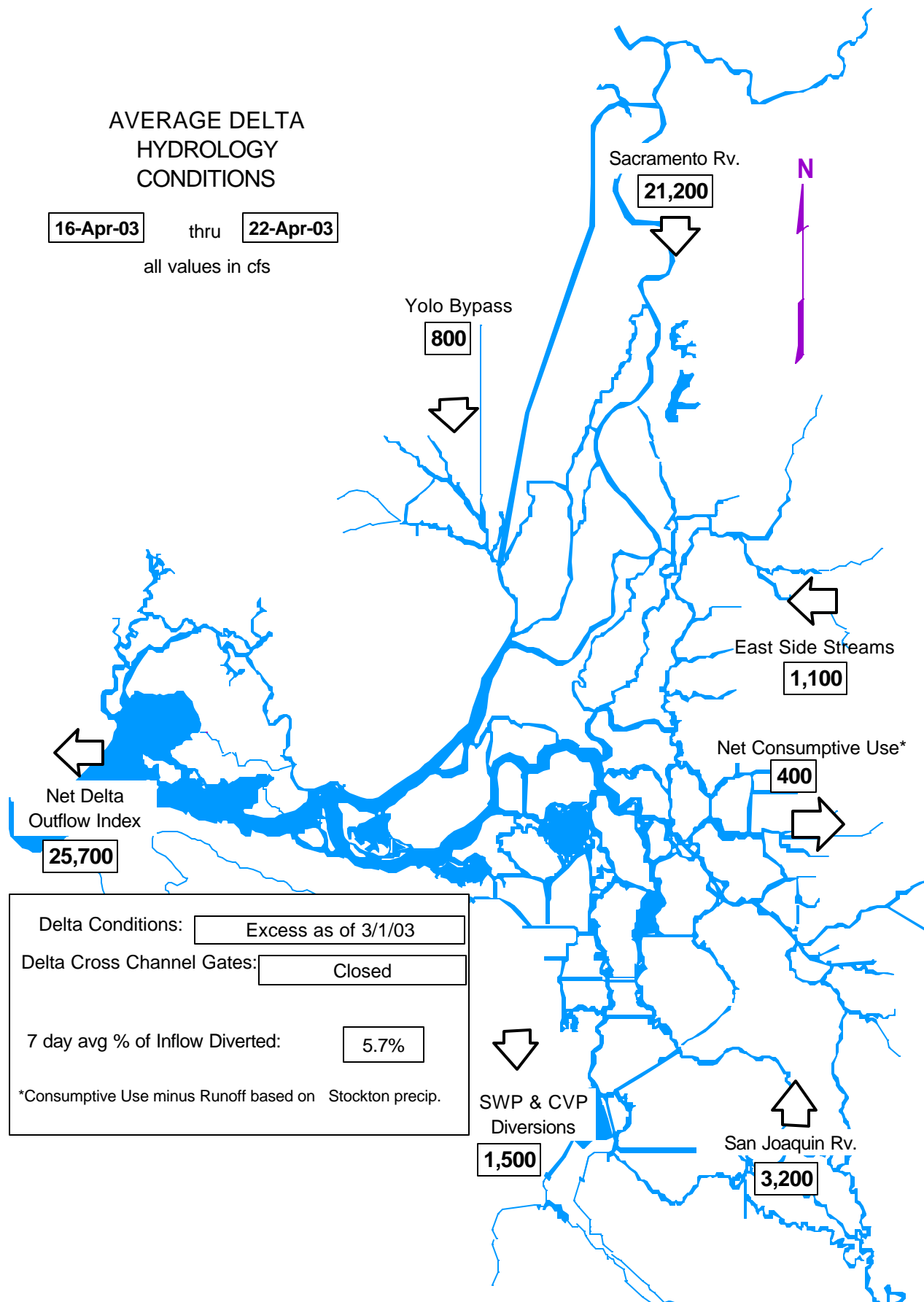
April 23, 2003



AVERAGE DELTA HYDROLOGY CONDITIONS

16-Apr-03 thru 22-Apr-03

all values in cfs



AVERAGE DELTA WATER QUALITY CONDITIONS

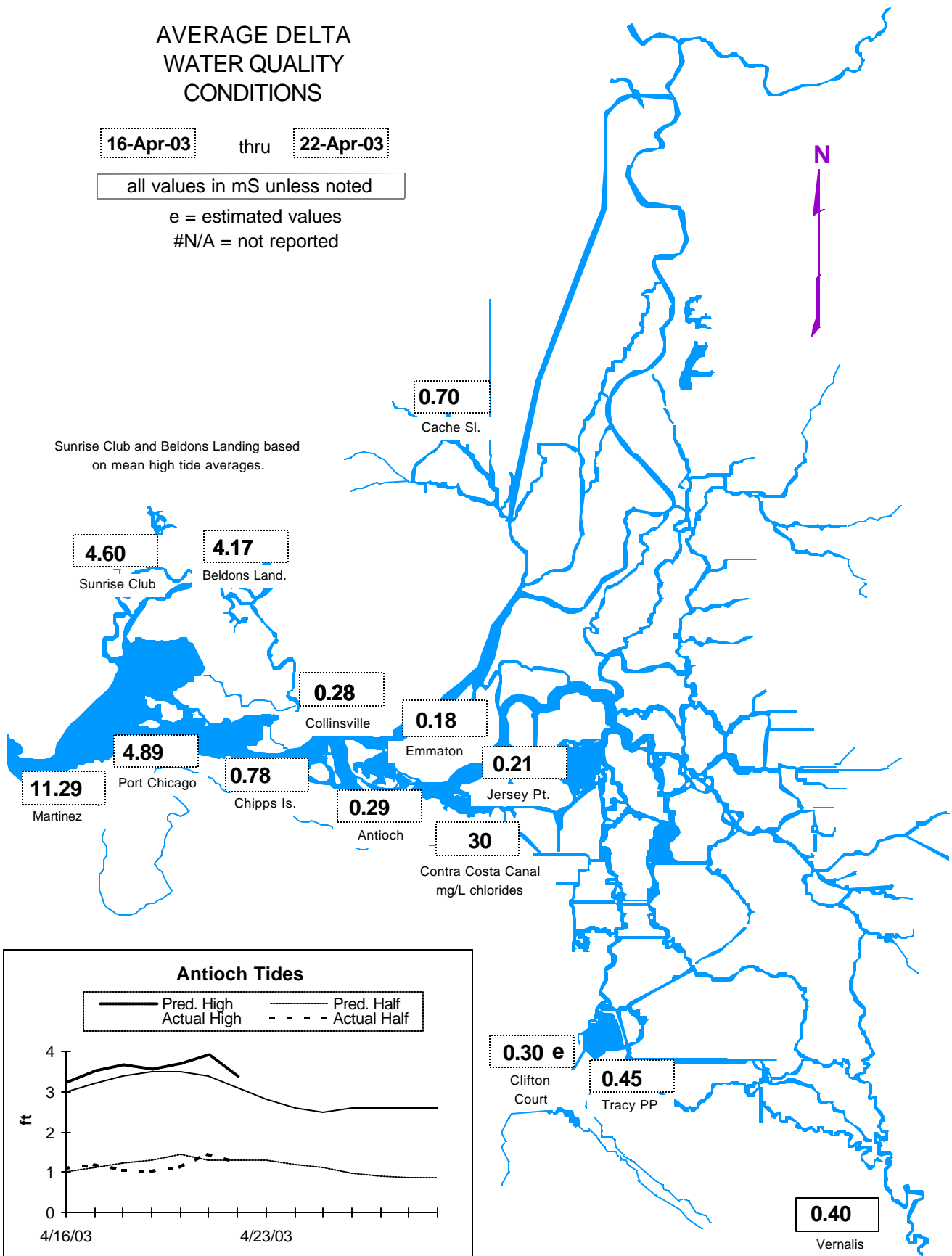
16-Apr-03 thru **22-Apr-03**

all values in mS unless noted

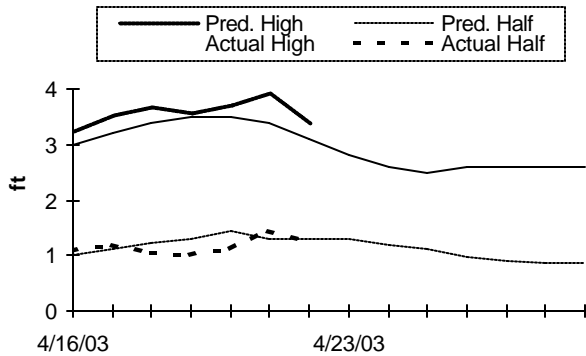
e = estimated values

#N/A = not reported

Sunrise Club and Beldons Landing based
on mean high tide averages.



Antioch Tides



DRAFT

Bay-Delta Standards

Contained in D-1641

DRAFT

CRITERIA	Apr 2003	May 2003	Jun 2003
FLOW/OPERATIONAL			
• Fish and Wildlife	Greater of 1,500 cfs or 100% of the 3-day avg. flow at		
SWP/CVP Export Limits			
Export/Inflow Ratio	35 % of Delta Inflow		
Minimum Outflow - mon. - 7 day avg.			
Habitat Protection Outflow, X2	7,100 - 11,400 cfs or X2 days (through June)		
River Flows:			
@ Rio Vista - min. mon. avg. - 7 day average			
@ Vernalis: Base -min. mon. avg. - 7 day average	1420 cfs		2280 cfs
	1136 cfs		1824 cfs
Pulse objective - mon. avg.	3200 cfs, per VAMP		
Delta Cross Channel Gates	Closed	14 days per Op's Group	

WATER QUALITY STANDARDS

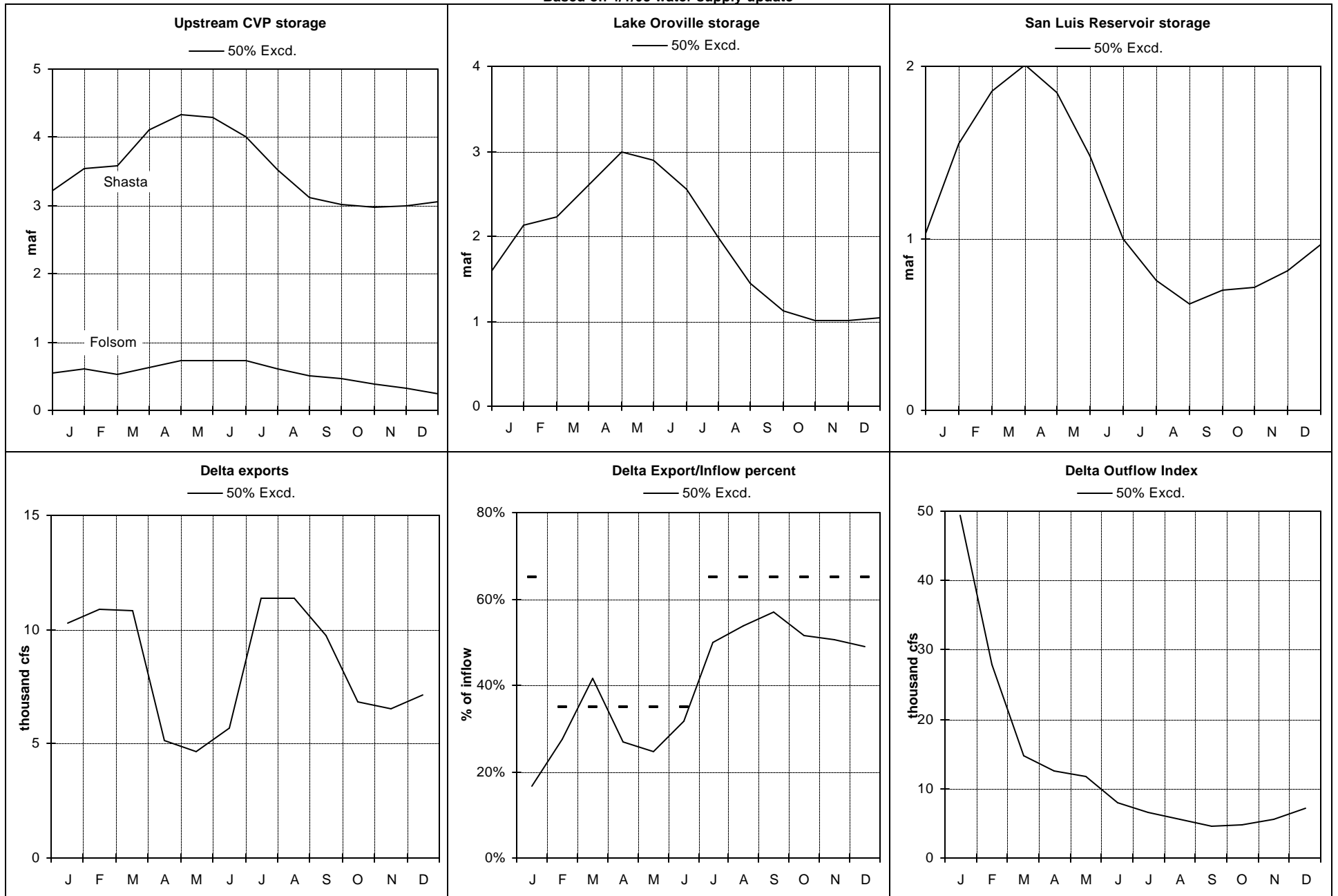
• Municipal and Industrial			
All Export Locations	Cl <= 250 mg/l		
Contra Costa Canal	Cl <= 150 mg/l for 175 days for Below Normal Year Type		
• Agriculture			
Western/Interior Delta	Max. 14-day average EC mmhos/cm: 0.45 mS/cm for Wet year		
Southern Delta	30 day running avg. EC <= 0.7 mS/cm	30 day running avg. EC <= 0.7 mS/cm	30 day running avg. EC <= 0.7 mS/cm
• Fish and Wildlife			
San Joaquin River Salinity	14-day avg; 0.44 EC		
Suisun Marsh Salinity	11.0 mhtEC		

Water Year Classification: Below Normal (Based on forecast, 4/15/2003)

SRI (40-30-30 @ 50%) = 7.5 MAF

SJV (60-20-20 @75%) = 2.5 MAF

Based on 4/1/03 water supply update



WY 2002/2003 EWA Accounting Summary
Based upon April 1 - 90% Exceedance Hydrology

Assumptions: SWP Allocation ~ 70%; NOD Purchases - 72 TAF; SOD Purchases -116.59 TAF; MWD SS - 43 TAF; SLR storage is @ 211 TAF (with EWA case) for lowpoint (August)

EWA NOD and SOD Storage																	
1	C/O	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
NOD ⁰	27 ⁴	1.7 ³	0.7 ³	7 ⁵						65 ⁶							74
SOD	37 ⁴																0

EWA Asset Acquisition in SWP San Luis ¹																	
2	C/O	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
E/I Relaxation							35										35
EWA share of SWP gain							21	2									23
Project Pumping to reduce EWA debt																	0
JPOD using excess flows																	0
JPOD using NOD storage																	0
Xfer NOD - Sacramento River ²											1 ⁺	1 ⁺	1 ⁺				2
Xfer NOD - San Joaquin River ²																	0
SOD SWP Surface/GW Purchases									37 ⁴	39 ⁷	39 ⁷	39 ⁷					153
Exchange of EWA assets																	0
Groundwater pumping SOD																	0
Exchange from CVP to SWP in SL																	0
Total Monthly EWA Assets		0	0	0	0	0	56	2	37	39	40	40	1	0	0	0	213

EWA Asset Acquisition in CVP San Luis																	
3	C/O	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
E/I Relaxation																	0
Project Pumping to reduce EWA debt							6										6
JPOD using excess flows																	0
JPOD using NOD storage																	0
Xfer NOD - Sacramento River ²				0.5 ³							19 ^{5,6}	19 ^{5,6}	19 ^{5,6}				58
Xfer NOD - San Joaquin River ²																	0
SOD CVP Surface/GW purchases																	0
Exchange of EWA assets																	0
Groundwater pumping																	0
Exchange from SWP to CVP in SL																	0
Total Monthly EWA Assets	0	0	0	1	0	0	6	0	0	0	19	19	19	0	0	0	64

EWA Expenditures at the Export Pumps																	
4	C/O	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
SWP export cuts				-32 ⁸	-89 ⁹			-16 ¹⁰	-48 ¹¹	-60 ¹¹							-245
CVP export cuts									-40 ¹¹	-20 ¹¹							-60
Total Expenditures	0	0	0	-32	-89	0	0	-16	-88	-80	0	0	0	0	0	0	-305

EWA End-of-Month Incremental Storage Changes																	
5	C/O	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
SWP in SL (without Source Shift)	11	0	0	-32	-89	0	56	-14	-12	-21	40	40	1	0	0	0	-21
CVP in SL	-6	0	0	1	0	0	6	0	-40	-20	19	19	19	0	0	0	-2
NOD Storage ¹²	24	2	1	2	-2	0	0	0	0	65	-25	-25	-25	0	0	0	17
Groundwater SOD	37	0	0	0	-37	0	0	0	0	0	0	0	0	0	0	0	0
Total Incremental Storage Changes	66	2	1	-30	-128	0	62	-14	-52	24	34	34	-5	0	0	0	-6

EWA End-of-Month Storage Balance at Various Sites																	
6	C/O	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
SWP in SL (without Source Shift)	11	11	11	-21	-111	-111	-55	-68	-80	-101	-61	-22	-21	-21	-21	-21	
CVP SL	-6	-6	-6	-6	-6	-6	0	0	-40	-60	-41	-22	-2	-2	-2	-2	
NOD Storage	24	26	27	29	27	27	27	27	27	92	67	42	17	17	17	17	
Groundwater SOD	37	37	37	37	0	0	0	0	0	0	0	0	0	0	0	0	
EWA Asset Balance	66	68	68	39	-89	-89	-28	-41	-93	-69	-35	-1	-6	-6	-6	-6	

San Luis Reservoir Storage Conditions																	
7	C/O	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Total Storage (base case) ¹³		645	783	1037	1554	1856	2008	1816	1399	866	484	254	316	372	404	555	
Encroachment																	
Total Storage (EWA case)		650	788	1010	1438	1739	1954	1748	1279	705	382	211	293	348	381	532	
MWD Source Shifting											18	25		-14	-14	-14	
Storage (with MWD source shifting)		650	788	1010	1438	1739	1954	1748	1279	705	400	254	336	377	395	532	

⁰ 2002 NOD Purchases = 135(YCWA) + 10(SGA). 2003 NOD Purchases = 185(YCWA) + 10(OWID). YCWA has firm 55 TAF; exercised an option for an additional amount - 10 TAF.

¹ The SWP was able to back 20 TAF of water for the EWA into Lake Oroville between September 14 and October 6, 2002

(which includes a 20% carriage water loss). SOD equivalent = 16 TAF (not a 1:1 Exchange).

² Aqueduct conveyance and evaporation losses are not included.

³ Carriage water loss applies to water transfers from the Sacramento River; a 10% conveyance loss applies to water transfers from the San Joaquin River.

A carriage water loss of 20% was applied to the 2002 water transfers.

⁴ 2002 SGA Transfer (CVP place of use). ⁵ 2002 KCWA Transfer (SWP place of use)

⁶ 2003 OWID Transfer (Joint place of use) ⁷ 2003 YCWA Transfer (Joint place of use)

⁸ 2003 SOD Transfer (SWP place of use)

⁹ About 32 TAF was expended for the December portion of the 12/27-1/2/03 curtailment.

¹⁰ Of this amount, approximately 9.5 TAF was expended for the 1/1-1/2/03 portion of the 12/31/02-1/2/03 curtailment; about 60 TAF was expended for the 1/15-1/20/03 curtailment;

about 20 TAF was expended for the 1/25-1/28/03 curtailment.

¹¹ The VAMP cost is estimated to be about 26 TAF for the SWP and is based upon the 4/8 estimate of base flows.

¹² The placeholders for VAMP shoulders and June are based upon the CVP/SWP April forecasts.

¹³ The CVP released the following: 4.645 TAF of water (which is the San Juan portion of the SGA) between 12/20-12/29/02 from Folsom Reservoir.

¹⁴ Based upon the 4/15/2003 DWR's 90% allocation study and the 4/18/2003 USBR's 90% B2 forecast.

WY 2002/2003 EWA Accounting Summary
Based upon April 1 - 50% Exceedance Hydrology
Assumptions: SWP Allocation ~ 75%; NOD Purchases - 72 TAF; SOD Purchases - 145 TAF

EWA NOD and SOD Storage																	
1	C/O	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
NOD ⁰	27 ^{*3}	1.7 ³	0.7 ³	7 ⁵						65 ⁶							74
SOD	37 ⁴																0

EWA Asset Acquisition in SWP San Luis ¹																	
2	C/O	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
E/I Relaxation							35										35
EWA share of SWP gain							21	2									23
Project Pumping to reduce EWA debt																	0
JPOD using excess flows																	0
JPOD using NOD storage																	0
Xfer NOD - Sacramento River ²											1 ⁺	1 ⁺	1 ⁺				2
Xfer NOD - San Joaquin River ²																	0
SOD SWP Surface/GW Purchases									37 ⁴	36 ⁷	36 ⁷	36 ⁷	36 ⁷				182
Exchange of EWA assets																	0
Groundwater pumping SOD																	0
Exchange from CVP to SWP in SL																	0
Total Monthly EWA Assets		0	0	0	0	0	56	2	37	36	37	37	37	0	0	0	242

EWA Asset Acquisition in CVP San Luis																	
3	C/O	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
E/I Relaxation																	0
Project Pumping to reduce EWA debt							6										6
JPOD using excess flows																	0
JPOD using NOD storage											19 ^{5,6}	19 ^{5,6}	19 ^{5,6}				58
Xfer NOD - Sacramento River ²				0.5 ³													1
Xfer NOD - San Joaquin River ²																	0
SOD CVP Surface/GW purchases																	0
Exchange of EWA assets																	0
Groundwater pumping																	0
Exchange from SWP to CVP in SL																	0
Total Monthly EWA Assets	0	0	0	1	0	0	6	0	0	0	19	19	19	0	0	0	64

EWA Expenditures at the Export Pumps																	
4	C/O	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
SWP export cuts				-32 ⁸	-89 ⁹			-16 ¹⁰	-100 ¹¹	-60 ¹¹							-297
CVP export cuts									-60 ¹¹	-60 ¹¹							-120
Total Expenditures	0	0	0	-32	-89	0	0	-16	-160	-120	0	0	0	0	0	0	-417

EWA End-of-Month Incremental Storage Changes																	
5	C/O	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
SWP in SL (without Source Shift)	11	0	0	-32	-89	0	56	-14	-63	-24	37	37	37	0	0	0	-44
CVP in SL	-6	0	0	1	0	0	6	0	-60	-60	19	19	19	0	0	0	-62
NOD Storage ¹²	24	2	1	2	-2	0	0	0	0	65	-25	-25	-25	0	0	0	17
Groundwater SOD	37	0	0	0	-37	0	0	0	0	0	0	0	0	0	0	0	0
Total Incremental Storage Changes	66	2	1	-30	-128	0	62	-14	-123	-19	31	31	31	0	0	0	-90

EWA End-of-Month Storage Balance at Various Sites																	
6	C/O	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
SWP in SL (without Source Shift)	11	11	11	-21	-111	-111	-55	-68	-132	-155	-118	-81	-44	-44	-44	-44	
CVP SL	-6	-6	-6	-6	-6	-6	0	0	-60	-120	-101	-82	-62	-62	-62	-62	
NOD Storage	24	26	27	29	27	27	27	27	27	92	67	42	17	17	17	17	
Groundwater SOD	37	37	37	37	0	0	0	0	0	0	0	0	0	0	0	0	
EWA Asset Balance	66	68	68	39	-89	-89	-28	-41	-165	-183	-152	-121	-90	-90	-90	-90	

San Luis Reservoir Storage Conditions																	
7	C/O	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Total Storage (base case) ¹³		645	783	1037	1554	1856	2008	1811	1407	985	705	520	615	656	751	886	
Encroachment																	
Total Storage (EWA case)		650	788	1010	1438	1739	1954	1743	1215	710	486	358	509	549	645	779	
MWD Source Shifting																	
Storage (with MWD source shifting)		650	788	1010	1438	1739	1954	1743	1215	710	486	358	509	549	645	779	

⁰ 2002 NOD Purchases = 135(YCWA) + 10(SGA). 2003 NOD Purchases = 185(YCWA) + 10(OWID). YCWA has firm 55 TAF; exercised an option for an additional amount - 10 TAF.

^{*} The SWP was able to back 20 TAF of water for the EWA into Lake Oroville between September 14 and October 6, 2002

(which includes a 20% carriage water loss). SOD equivalent = 16 TAF (not a 1:1 Exchange).

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A carriage water loss of 20% was applied to the 2002 water transfers.

³ 2002 SGA Transfer (CVP place of use).

⁴ 2002 KCWA Transfer (SWP place of use)

⁵ 2003 OWID Transfer (Joint place of use)

⁶ 2003 YCWA Transfer (Joint place of use)

⁷ 2003 SOD Transfers (SWP place of use)

⁸ About 32 TAF was expended for the December portion of the 12/27-1/2/03 curtailment.

⁹ Of this amount, approximately 9.5 TAF was expended for the 1/1-1/2/03 portion of the 12/31/02-1/2/03 curtailment; about 60 TAF was expended for the 1/15-1/20/03 curtailment; about 20 TAF was expended for the 1/25-1/28/03 curtailment.

¹⁰ The VAMP cost is estimated to be about 26 TAF for the SWP and is based upon the 4/8 estimate of base flows.

¹¹ The placeholders for VAMP shoulders and June are based upon the CVP/SWP April forecasts.

¹² The CVP released the following for instream benefits: 4.645 TAF of water (which is the San Juan portion of the SGA) between 12/20-12/29/02 from Folsom Reservoir.

¹³ Based upon the 4/1/2003 DWR's 50% allocation study and the 4/18/2003 USBR's 50% forecast.